

# L-Cysteine Product Specification

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Effective Date: [May 21,2026]

## 1. Product Basic Information

Project	Content
Product name	L-cysteine
CAS Number	52-90-4
EINECS Number	200-158-2
Molecular formula	C <sub>3</sub> H <sub>7</sub> NO <sub>2</sub> S
Relative molecular mass	121.16
Chemical name	L- $\alpha$ -Amino- $\beta$ -Mercaptopropionic acid
Functional classification	Food nutrient fortifiers / Synthetic flavors for food use
Operative norm	Complies with relevant standards for food nutritional fortifiers

## 2. production engineering

Produced by fermentation using starch or sugars as raw materials; or synthesized via electrolytic reduction from L-cysteine produced by fermentation or enzymatic methods.

## 3. Sensory Requirements

Project	Ask	Method of calibration
Colour and lustre	White	Place an appropriate amount of sample on a clean, dry white porcelain plate and examine it visually under natural light.
State	Crystal or crystalline powder	Ditto
Smell	Has a slight distinctive odor	Organoleptic investigation

## 4. physicochemical indexes

Project	Metric	Method of calibration
Content (On a dry basis)	98.5% ~ 101.0%	Iodimetry
Specific optical rotation $\alpha_m$ (20°C, D)	+8.3 ~ +9.5° • dm <sup>2</sup> • kg <sup>-1</sup>	Optical rotation method
pH (2.5% aqueous solution)	4.5 ~ 5.5	GB/T 9724
Drying reduction	≤ 0.5%	Atmospheric pressure, constant temperature drying method
Ignition residue	≤ 0.1%	High-temperature Ashing Method
Chlorides (expressed as Cl)	≤ 0.04%	Turbidity Method
Lead (Pb)	≤ 0.3 mg/kg	GB 5009.12 or GB 5009.75
Total arsenic (As calculated)	≤ 0.2 mg/kg	GB 5009.11 or GB 5009.76

## 5. Other Features

Project	Description
Solubility	Soluble in water, poorly soluble in ethanol
Stability	Acid-stable; readily oxidized to form cystine in neutral and alkaline solutions.
Quality guarantee period	24 Store in a cool, dry, and well-ventilated place for months.
Purity specification	$\geq 99\%$

## 6. applied range

Food Classification Code	Food Name
13.01.01	Infant Formula Foods
13.01.02	Infant formula for older infants and young children (limited to infant formula for older infants)
13.01.03	Infant formula foods for special medical purposes
13.03	Special Medical Purpose Formula Foods

Furthermore, it is widely utilized in baked goods (to promote gluten formation and fermentation, and prevent aging), fruit juice beverages (for antioxidant effects and prevention of browning), as well as in the field of flavors and fragrances.

## 7. packaging and storage

Project	Ask
Pack	Food-grade sealed packaging (commonly available in 1 kg and 25 kg sizes)
Storage condition	Store in a cool, dry, and well-ventilated place
Matters need attention	Avoid contact with oxidizing agents to prevent deterioration.

## 8. remarks

The above specifications are established in accordance with China's national food safety standards. If export or customer requirements necessitate compliance with standards such as FCC, USP, EP, or AJI, the parameters shall be adjusted accordingly.